REMARKS FOR ADMINISTRATOR BOLDEN

WOMEN IN AEROSPACE

June 14, 2013

It's great to be here at the Women in Aerospace conference again. We live in a time when women are doing amazing things in our field.

In two days, it will be 50 years since the first woman to travel to space, cosmonaut Valentina Tereshkova, launched by Vostok rocket from Baikonur.

It's incredible that in just 31 years from Amelia Earhart's first solo flight by a woman across the Atlantic on May 21, 1932, the world was sending women to space.

This coming Tuesday, we'll mark the first ascent of an American woman into space as we celebrate the 30th anniversary of Sally Ride's first launch on the space shuttle.

I hope some of you were able to see the moving tribute Sally received at the Kennedy Center last month, where so many people demonstrated her wide and lasting influence that continues strongly into the next generation.

Dr. Sally Ride was more than an astronaut -- she was an American treasure. It was my pleasure to get to know Sally personally and to serve in the astronaut corps at the same time as she flew. A lot of you in this room probably also knew Sally or took inspiration from her.

It really was something else when Sally went to space. The whole world watched. But Sally just took it in stride. She just wanted to go to space, and do what she did, which was being a great astronaut and scientist.

There are only a handful of names in the history of human spaceflight that are widely known – and Sally's is certainly one of them.

This is not just because she was the first American woman to fly to space – that indeed was an historic achievement – but because after Sally knocked down that barrier, many others have followed. Still not as many as we would like, but I know there will be many more women going to space and making their mark in science and technology in the coming years.

Already we've had Mae Jemison, the first African American woman in space, and Suni Williams, who ran a marathon from space as well as performing a record number of spacewalks and science experiments. Cady Coleman, who played the flute live from on orbit, became quite well known when she participated with CNN in documenting her preparation and conduct of her ISS mission. I mention some of these other things because these women are helping us to LIVE in space. Not just gather data, but to really learn more about and help mature the human experience in this new and challenging environment.

Right now, Dr. Karen Nyberg is a flight engineer aboard the International Space Station, where she will live and carry out important research until next November. She's one of a select group of 43 American women who have flown to space, and, as I said, we will increase that number.

Of course, flying in space is not the only thing to which women can aspire in our field. Women hold many top science positions at NASA, such as our Deputy Administrator, Lori Garver; Dr. Linda Spilker, Cassini project scientist; Dr. Ellen Ochoa and Lesa Roe, Center Directors at the Johnson Space Center and the Langley Research Centers, respectively; and Dr. Colleen Hartman, from whom you'll hear later today, is Deputy Center Director for science at the Goddard Space Flight Center. And our Agency CFO is Dr. Beth Robinson. There are many more, far too numerous to mention.

It's truly an exciting time to be involved in aerospace, for all of us. Thanks to Sally Ride's work throughout her lifetime, young

women and girls, including those of my granddaughters' generation, can now aspire to fly in space.

They know that being a scientist or an engineer is just as much a career choice for them is it is for their male classmates. That is primarily because of the way Sally lived her life and dedicated it to future generations.

I don't know if everyone knows that Sally also was a big proponent of commercial space and through her work on the Augustine Commission helped us clarify some of the issues we'd need to resolve to achieve the successes we are having now with cargo resupply, and I'm confident we will have in the future with commercial crew.

It is fitting that President Obama has announced that Sally will receive the Presidential Medal of Freedom, the nation's highest civilian honor.

For myself, I know that there has never been a month or a moment in my life where I questioned the indispensable power, potential, and contributions of women.

Maybe that stems from the example of my own mother who taught me at an early age that regardless of race, gender, background, or income, there was nothing I could not do. My mother was a teacher and a librarian, but at heart she was also an explorer. Her field of exploration was not deep space, but education…her vehicles were literature, history, and reading…and her destination was the untapped potential and empowerment of young girls and boys who she believed could succeed despite the obstacles of discrimination and poverty that were so prevalent in the South Carolina of her time.

So, I grew up knowing the power of women. I had the pleasure of flying to space with two: Dr. Kathryn Sullivan on STS-31 *Discovery* and STS-45 *Atlantis* and Dr. Jan Davis on STS-60 again aboard the shuttle *Discovery*. Kathy, of course, is the first American woman to walk in space and is now the Acting Administrator of NOAA.

In 2011, we began posting videos of amazing women at NASA who are making sure that America continues to be the world leader in space exploration and scientific discovery. These videos, featured on our Women@NASA website, are just one way women at NASA are inspiring their colleagues and future NASA employees.

Each of these women – nominated by their center management – plays an important role at NASA. They are engineers and scientists, lawyers and astrophysicists, and proof that no matter what kind of job you want to do, you can play an important role in our nation's space program. These women are essential to our vision of reaching new heights and revealing the unknown so that what we do and learn will benefit all humankind. And the truth is we need them more than ever.

A new Girl Scouts study shows that an overwhelming majority – 74% -- of high school girls across the country are interested in science, technology, engineering, and mathematics, or STEM, studies. And that's great news.

But we have to do a better job of breaking down old barriers and unleashing this potential.

The theme for Women's History Month this year was "Women Inspiring Innovation through Imagination: Celebrating Women in Science, Technology, Engineering, and Mathematics."

In fact, there is much to celebrate. Over the past 30 years, women's participation in STEM fields has risen dramatically. For example, National Science Foundation data indicate that women earned 52% of doctorates in the life sciences in 2006, compared to 21% in 1976.

However, in 2009, the percentage of women earning doctorate degrees in mathematics/computer sciences, physical sciences, and engineering, while certainly greater than 30 years ago, is far below 50%.

I want all of you to help us in this effort by helping us find great candidates for the new Sally Ride Internships we announced last month and by mentoring as much as you can.

We need you to do even more outreach to let women and girls know about the opportunities available through WIA.

WIA has professional development and mentoring opportunities already. But you all have girls in your lives with whom you interact regularly. What are they talking about? What interests them? Do you know if they see STEM as a viable option for their future or do they need help to overcome some of those historical barriers of perception and opportunity that women have faced in pursuing those fields? It's not so much a matter of we who are already in the field, trying to make someone like something, as much as it is drawing out their interests and supporting them when we see them.

Young people are always asking me, "What do you have to do to be an astronaut or to work at NASA?" The answers are pretty simple. Be the best at what you do, and follow it with passion. That's what we have to do! Keep those sparks of passion alive.

Look for them and help provide the environment where a passion for exploration can lead to a career in the multi-faceted field in which we are privileged to work.

Speaking of the next generation, we're nearing an announcement of our next class of astronaut candidates, and with a near-record number of 6300 applicants, I can assure you that there were many strong female applicants and there will definitely be impressive women in the 2013 astronaut class.

As NASA lays the groundwork for future challenging missions this 2013 class of astronaut candidates, and the 2009 class before them, will be among those who will have the opportunity to plan and carry out these exciting missions, strengthen our nation's leadership in space, and push the boundaries of exploration.

I think a lot of you are familiar with what President Obama has proposed for NASA for fiscal year 2014, but let me point out the highlights.

First, the $17.7 billion budget request means our funding will be stable. It's also a strong indication of the President's support for NASA's activities. The budget represents a consistent investment in the priorities the president and Congress agreed on in the our roadmap from the 2010 Authorization Act and ensures that the United States will remain the world's leader in space exploration and scientific discovery for years to come, while making critical advances in aerospace and aeronautics to benefit the American people.

It fully funds the Space Launch System (SLS) heavy lift rocket and *Orion* Multipurpose Crew Vehicle (MPCV) needed to carry astronauts to deep space, and it advances game-changing technologies to carry out the first-ever mission to identify, capture, and relocate an asteroid.

It makes possible our ongoing use of the International Space Station as our springboard to the rest of the solar system.

It supports a full portfolio of science missions, from a new rover on Mars in 2020 to ongoing support for the James Webb Space Telescope's 2018 launch. There are new Earth Science missions. On June 26, we will launch IRIS, a NASA Small Explorer Mission to observe how solar material moves, gathers energy, and heats up as it travels through a little-understood region in the sun's lower atmosphere.

As many of you may recall, three years ago President Obama paid a visit to Kennedy Space Center where he set goals of sending humans to an asteroid for the first time in history by 2025 and making a crewed journey to Mars by the 2030s. The President’s FY2014 budget request supports the continuation of our efforts to achieve these goals.

And so, we're developing a first-ever mission to identify, capture, and relocate an asteroid, followed by exploration and sampling of this asteroid by astronauts, using our deep-space human space flight assets under development. Capturing and redirecting an asteroid will allow us to accomplish multiple goals.

It takes advantage of the hard work on our deep space technologies and will provide valuable experience in mission planning and operations that are needed for future crewed deep-space missions, including our planned visit to Mars.

It also gives our astronauts a chance to interact with an asteroid for potential resource utilization in space, and it informs our efforts to prevent an asteroid or other Near Earth Object (NEO) from colliding with devastating force into our planet. Planning and design of this mission has already begun and will continue into the summer and next fall.

Leveraging capabilities throughout the Agency, we plan to use a high-power solar electric propulsion system to rendezvous with, capture, and redirect a small asteroid about 7-10 meters in diameter with a mass around 500 metric tons into a stable orbit in the lunar vicinity. An asteroid of this size does not pose a hazard to Earth. In its new location, our astronauts will be able to visit the asteroid and return samples using the *Orion* spacecraft launched into space on the SLS rocket.

The $105 million in the budget supports a broad asteroid strategy, planning for the capture and redirection, and an increased role for innovative partnerships and approaches to help us amplify efforts to identify, characterize, and track asteroids and protect us from any potential threats.

This mission represents an unprecedented technological challenge -- raising the bar for human exploration and discovery, while helping protect our home planet and bringing us closer to a human mission to one of these mysterious objects.

The asteroid strategy is preparing us for Mars journeys with technology development and operational capabilities that are needed for human missions to the Red Planet. Our asteroid mission builds off our experiences on ISS and prepares us for even deeper space exploration by offering a test environment that is very different than low earth orbit. This experience exploring an asteroid will be critical for future Mars journeys.

Next Tuesday, the anniversary of Sally Ride's first flight, we're going to have an “Asteroid Initiative Industry and Partner Day” at NASA Headquarters, where we'll update everyone on where we are in this important initiative and what comes next.

Here at this conference, I'm also glad to see you're discussing so many other things that also are critical priorities for NASA, like transport to low Earth orbit and the NextGen air transportation system.

You know, I guess you could say that science, technology, engineering, and math are becoming our family business. My 13-year old granddaughter, Mikaley, has announced that she wants to be a rocket scientist. My daughter, her Aunt Kelly, is a plastic Surgeon who earned dual degrees in Chemistry and Chemical Engineering at Spelman and Georgia Tech. She's Mikaley's idol and role model, and I couldn't be more excited.

I don't know if anyone here is familiar with the obscure television series "Life on Mars" from a couple of years ago, but in the final scene, you see a crew arriving at the planet Mars, and President Obama sends the commander, Annie Norris, and HER crew greetings. I'm thinking that one day, another U.S. President will send a real mission commander and HER crew greetings on Mars as well.

I thank WIA for all the good you do for our field; for increasing our bench strength and extending the range of our possibility.

At NASA, we're now embarked on a challenging and exciting journey into the future of life in deep space. It is my sincere hope that all of you in this room will join us in this incredible venture.

I hope you enjoy an incredibly successful conference.